SECTION 01120

DEBRIS/WASTE HANDLING CRITERIA

PART I GENERAL

1.1 SCOPE

This Section provides the requirements for handling, containerization and stockpiling of debris/waste generated during the dismantlement of processing and support facilities. Debris/waste shall be segregated into established categories and containerized as directed in this Section. This includes, but is not limited to, the following:

A. Classification of materials by segregation category.
B. Segregation of materials.
C. Containerization/loading.
D. Movement of containers within the construction zone.
E. Tagging containers.
F. Debris stockpiling.
G. Collection and containerization of controlled area office trash from Contractor-owned office trailers.

1.2 RELATED SECTIONS

A. Section 01515 - Mobilization, Demobilization, and General Site Requirements.
B. Section 01516 - Asbestos Abatement.
C. Section 01517 - Removing/Fixing Radiological Contamination
D. Section 01519 - Decontamination of Contractor Provided Tools, Equipment, and Material.
E. Section 03315 - Concrete/Masonry Removal.
F. Section 05126 - Structural Steel Dismantlement.
G. Section 07415 - Transite Removal.
H. Section 15065 - Equipment/System Dismantlement.
I. Section 15067 - Ventilation and Containment.

1.3 REFERENCE MATERIALS

See Invitation for Bid/Request for Proposal (IFB/RFP) for the following:

A. Index of Drawings.
B. Photographs.
C. Drawings.
D. Contractor Safe Work Plan Format Requirements.
E. Waste Management Plan (WMP), which includes the Material Segregation and Containerization Criteria (MSCC) form. The MSCC form identifies anticipated waste streams to be generated and their respective waste categories. In addition, the MSCC identifies containers (where applicable) for the waste streams, size criteria, and special waste handling criteria. Debris is defined as dismantled piping, equipment, systems, components, materials, etc.

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1.4 REFERENCES, CODES AND STANDARDS

All work shall be accomplished in accordance with the following code and standards:

A. DOE Order 460.1A Packaging and Transportation Safety.
B. 10 CFR 835 Occupational Radiation Protection.

1.5 SUBMITTALS

The Contractor shall submit the following for approval by FDF.

A. Prior to mobilization, the Contractor shall submit a detailed debris/waste handling Safe Work Plan in accordance with IFB/RFP Contractor Safe Work Plan Format Requirements contained in Part 7 of the IFB/RFP for approval by FDF.

B. The Safe Work Plan shall include the Contractor's:

1. Method of cutting to meet debris size requirements (if different from methods used for dismantlement).
2. Proposed equipment for loading and handling containers.
3. Method to verify that the weight capacity of each container is not exceeded.
4. Method for loading containers.
5. Method for segregating waste categories.
6. Method for moving debris in and around project area (debris flow).
7. Proposed container staging areas, as required by this Section.
8. Material inspection area.

C. Monthly Container Report

A report shall be submitted identifying the current waste container stock listing of drums and white metal boxes by inventory number delivered and staged at the project site. The report shall be issued on a monthly basis. The report shall describe the usage and/or contents of the waste containers under control by the Contractor.

1.6 PROJECT CONDITIONS

A. Categories of debris/waste are identified in Part 6 of the IFB/RFP C WMP (MSCC).

B. Generation of additional debris/waste shall be minimized. Waste minimization shall include, but not be limited to, unpacking equipment and material prior to entering the Controlled Area. The Contractor shall not bring any hazardous material to the construction zone unless prior approval is received from FDF. Alternatives to hazardous materials shall be used whenever possible.

C. The Contractor shall notify FDF immediately when hazardous or mixed wastes are found or, whenever possible, before they are generated. Further management of these wastes shall be coordinated with FDF.

D. Request for containers shall be made to FDF in writing at least 4 calendar days in advance of

need.

PART II PRODUCTS

2.1 EQUIPMENT

The Contractor shall supply all equipment required for sizing debris and for moving containers, except ISO containers, within the construction zones, as well as all equipment to load containers. FDF will move ISO containers.

2.2 MATERIALS - OWNER (FDF) FURNISHED

A. FDF will provide appropriate containers for debris/waste categories as identified on the MSCC, except liquid storage tanks as noted in Section 01517 and as otherwise specified in the IFB/RFP. These containers include, but are not limited to, the following:

Container Designation	Nominal Exterior Dimensions (HxWxL)	Maximum Gross Weight (lbs)
Large white metal box (LMB) (top load)	8'x8'x20'	42,000
ISO container (top load)	8'x8'x20'	42,000
ISO container (end load)	8'x8'x20'	42,000
Small metal box	3'x4'x6'	9,000
55-gallon drum with lid	---	882
Roll-off boxes (ROB)	6'x8'x22'	42,000

B. FDF will deliver empty ("prepped", if required) containers, pallets (possibly radiologically contaminated), dunnage, and miscellaneous materials, as required, to the container staging (also referred to in the IFB/RFP as “queuing”) area.

2.3 MATERIALS - CONTRACTOR FURNISHED

A. The Contractor shall supply fiber-reinforced polyethylene or polyester sheeting approved for outdoor storage: color, yellow; minimum thickness of 6-mils; ultraviolet resistant; as manufactured by Griffolyn, Herculite or equal.

B. The Contractor shall furnish 8 1/2" x 11" weatherproof removable tags.

The Contractor shall furnish 3.5'- 4' high woven metal fencing consisting of 14 gauge 2 inch x 4 inch galvanized welded mesh with 7 foot painted steel “T” posts embedded to a depth of 2 feet

and placed at 10 foot intervals.

PART III EXECUTION

3.1 PREPARATION

A. Roll-Off Box Staging Area:

The Contractor shall establish and maintain a ROB staging area, which shall be proposed by the Contractor unless otherwise specified by FDF on reference site drawings. To define and control access to this area, woven metal fencing will be erected around the perimeter of the staging area. One section of the fence will be open for access and egress. The fencing must be maintained in good condition. This area shall be used for temporary staging of empty and full ROB containers. If the staging area is a non-concrete surface, the Contractor shall be responsible for stabilizing and maintaining the areas and routes of access to accommodate container handling requirements.

B. Other Container Staging:

The Contractor shall prepare two other container staging areas. The first area will be used to store empty drums and white metal boxes (includes Sea Lands), and the other area will be used for full drums and white metal boxes - which shall be proposed by the Contractor unless otherwise specified by FDF on reference site drawings. Woven metal fencing will be erected around the perimeter of each staging area. One section of the fence for each area will be open for access and egress. The fencing must be maintained in good condition. Signs shall be posted in each storage area identifying empty or full containers.

C. Material Inspection Area:

The Contractor shall establish a material inspection area, which shall be proposed by the Contractor and approved by FDF, for each contamination area to allow FDF to inspect debris and/or perform radiological surveying. The inspection area shall be arranged such that routine access is prevented by means of fencing and/or barrier tape with appropriate posting to identify that the items contained are being held for visual inspection survey or radiological. This area shall be off-limits to individuals other than FDF/Contractor waste technicians and radiological survey personnel.

3.2 APPLICATION

A. Debris handling requirements are defined by the following FDF classifications: 1) non-process debris; 2) process debris; and 3) suspect process debris. All debris shall be sized, segregated, and containerized in accordance with Part 6 of the IFB/RFP, WMP.

1. Non-Process Debris:

Non-process debris will be exempt from the inspection requirement for *visible process residues* as described in Article 3.2.A.4 of this Section. Non-process debris would include, but are not limited to:

- piping for utility systems (i.e., steam, condensate, drinking water, air, and others).
- electrical systems (i.e., conduit, motors, electrical panels, and others).

- obvious non-process items such as structural steel (Debris Category A), concrete (Debris Category E), transite (Debris Category G).
- most miscellaneous materials categorized as Debris Category I.

Surface decontamination of non-process debris per Section 01517, Article 3.1 applies.

2. Process Debris:

Process debris is defined as debris that fails the inspection for *visible process residues* per Article 3.2.A.4.a. and debris listed in the MSCC (located in the WMP, Part 6 of the IFB/RFP) as Debris Category C. Process piping and debris predetermined to be Debris Category C in the MSCC will be exempt from the inspection for *visible process residues* (described below in Article 3.2.A.4) and decontamination of internal surfaces; however, the applicable provisions under Article 3.1 of Section 01517 still apply.

3. Suspect Process Debris:

Suspect process debris, which includes all other debris not specifically identified as non-process debris or process debris, shall be subject to inspection by FDF per Article 3.2.A.4 to determine the presence or absence of *visible process residues*.

4. Visible Process Residue Inspection Requirements:

The definition of *visible process residues* (green salt, yellow cake, black oxide, etc.) is hold-up/materials on the interior or exterior surfaces of debris that is obvious and that if rubbed, would be easily removed. Dirt, oil, grease, stains, rust, corrosion, and flaking do NOT qualify as visible process residues; however, dirt, oil, grease, stains, rust, corrosion, and flaking require decontamination for radiological control purposes prior to removing the debris from the enclosure or prior to opening a building to the environment per Section 01517. Regardless of whether or not visible process residues are present, all debris are still considered to be radiologically contaminated unless otherwise specifically identified.

FDF visual inspection will take place following dismantlement, sizing, and prior to sealing of openings in accordance with Section 15065, decontamination in accordance with Article 3.1 of Section 01517, and relocation to the FDF-approved inspection staging area referenced in Article 3.1.C.

a. Debris That Fails Inspection for Visible Process Residues:

1. Non-Pipe Debris: Debris that fails the inspection criteria for visible process residues will be identified with yellow paint by FDF and the Contractor shall attempt to remove the visible process residues at least one time in accordance with Section 01517 prior to FDF reinspection. If the debris fails the second inspection for visible process residues, it shall be deemed as "Process Debris"

(Debris Category C) and will be identified with red paint by FDF.

2. Pipe: Piping that fails the first inspection criteria for visible process residues will be deemed as "Process Debris" and will be identified with red paint by FDF. The ends of process pipe shall be sealed per Section 01517, Article 3.1.B.1; decontamination of internal surfaces shall not be performed. The requirement for decontamination of external surfaces per Article 3.1 of Section 01517 still applies.

b. Debris That Passes Inspection for Visible Process Residues:

Debris that passes the FDF inspection for visible process residues shall be identified with green paint by FDF. The debris then shall be containerized or staged according to Part 6 of the IFB/RFP and Article 3.3 of this Section.

B. The Contractor shall be responsible for retrieving empty containers from the container staging areas (except for ISO containers), segregating debris/waste, loading, securing containers, tagging for on-site movement, and moving containers back to the designated container staging area. The Contractor shall use the MSCC as the basis of all containerizing activities and shall be responsible for minimizing debris/waste generation by limiting the amount of material brought on site.

C. Equipment, material or debris requiring movement outside the enclosed building to be sized, containerized or palletized, must meet the requirements for removal/fixing of radiological contamination per Section 01517. If the removal/fixing requirements cannot be met, the material may be encapsulated or wrapped in fiber-reinforced sheeting and sealed prior to movement to prevent the migration of radioactive contamination.

Palletized equipment, material or debris shall be managed by the Contractor as follows:

1. Place fiber-reinforced sheeting over pallet, position material on pallet, and wrap the sheeting over material.

2. Secure fiber-reinforced sheeting over material to prevent migration of contamination.

3. Secure material to pallet with vinyl or metal banding material; however, transite panels shall be banded first, then placed on pallets.

3.3 PERFORMANCE

A. Loading of Containers:

1. FDF must be present during all loading of Sea Lands and Roll-off Boxes. The Contractor shall provide notice to FDF at least 24 hours prior to loading of these containers.

2. Provide a debris/waste handling supervisor to supervise operations. The supervisor shall be required to complete (FDF conducted) Nevada Test Site Waste Acceptance Criteria/Waste

Certification Program Plan (NTSWAC/WCPP) training.

3. Segregate and containerize all debris/waste according to the categories defined in the MSCC. Should a debris/waste stream be discovered that is not on the MSCC, then work on the handling of this debris/waste will stop, whereupon FDF shall be contacted for further direction.

4. Commingle Debris Categories A, B, D (except for lead), and incidentally generated E in the designated container or stockpile, as directed by the MSCC. Debris Category I shall be segregated and containerized according to two subcategories: I2 C Non-compressible and/or Non-organic Misc. Debris; and I4 C Compressible and/or Organic Misc. Debris.

5. Upon receipt of containers, the Contractor shall perform a visual inspection to ensure that the containers do not contain any of the prohibited items identified in this Section. Should any containers contain freestanding liquids (ice is considered a freestanding liquid) upon delivery or removal from the work zone, FDF will remove liquids if any is found.

6. Fill containers, boxes, and drums such that the interior volume is as efficiently and compactly loaded as practical up to the maximum gross weight limit of the container. Fill void space in large piping, equipment, containers, etc., with smaller debris. Any container exceeding maximum allowable gross weight shall have contents removed, as required, to lower the weight to an acceptable range. Contents shall be prepared for containerization so as to minimize load shifting or damage to container during movement.

7. Except during loading activities, empty white metal boxes and drums must remain in the established empty container staging area.

8. The following "Prohibited Materials List" shall be displayed in the containerization area or on each container. Notify FDF if any of the prohibited materials are identified for specific material handling directions.

PROHIBITED MATERIALS LIST

a. Compressed gases (e.g., cylinders, unpunctured aerosol cans).
b. Explosives.
c. Free liquids; Materials containing free liquids.
d. Fine particulates (respirable fines).
e. Hazardous waste.
f. Corrosive materials.
g. Etiologic agents.
h. Flammable liquids or combustible solids.
i. Whole or shredded scrap tires.

9. The Contractor shall install weatherproof removable tags on each debris/waste container prior to loading. Tags shall identify container contents, using indelible ink, by debris/waste category specified in the MSCC and the debris/waste's building of origin. For Category J Debris, an exact description of the contents is required.

10. Thorium contaminated debris/waste shall be containerized separately from non-thorium

contaminated debris/waste.

B. Security and Movement of Containers:

To ensure security and movement of containers, the Contractor shall:

1. Move containers to the specific task location from the container staging area.

2. Ensure that the lid, doors, or tarps on debris/waste containers are secured when no containerization is in progress to prevent unauthorized containerization of materials or release of container contents. Containers must be weather protected when lid is not secured, to prevent entry of snow and rain or release of container contents.

3. Inspect all containers, double bagged materials, drums, boxes, or double wrapped components for exterior contamination and damage before removing them from the work area. Damaged containers shall be reported to FDF.

4. Secure full containers.

   a. End-loading ISO containers shall be secured by closing and latching doors, ensuring that all latching mechanisms are engaged.

   b. Drums shall be secured as follows:

      1. Place lid on drum, ensuring that gasket is seated to maintain a tight seal.
      2. Install bolt-type lock ring on lid and torque to 45 " 5 foot-pounds.
      3. Drums shall be securely strapped together on pallets, using at least one strap.

   c. Top-Loading Metal boxes (large and small) shall be secured as follows:

      1. Inspect gasket for damage and repair, if required.
      2. Place gasket and lid on the box and secure with clamping device or pins.

   d. Roll-Off Boxes (ROBs) shall be secured as follows:

      1. Cover ROB with tarp or steel lid.
      2. Secure tarp (with straps) or steel lid (with clamping device or pins).
      3. Secure all gate chains.
      4. Ensure that containers have not been damaged during loading.

   e. Prior to securing lid or doors on containers holding asbestos-containing materials (ACM), fold fiber-reinforced sheeting over ACM and seal with tape.

   f. Return full, secured containers to the staging area (except for ISOs, which will be removed by FDF).

   g. Filled ROBs must remain inside the established staging area until they can be removed by FDF.

   h. Filled drums and white metal boxes must remain inside the established full container

staging area until they can be removed by FDF.

i. The Contractor shall decontaminate waste containers, equipment, tools, etc., prior to exiting the construction zone or staging area as necessary in accordance with Section 01519.

C. Stockpiling of Materials:

1. The Contractor shall establish/construct and manage debris stockpile area(s) on concrete or asphalt surfaces with run-off controls, as required by Section 01515, and fencing. The Contractor shall ensure that run-off controls are constructed and used in accordance with Section 01515. Stockpiled materials shall be sized and segregated in accordance with the MSCC located in Part 6 of the IFB/RFP. Structural steel shall be stacked in a unidirectional manner and all materials shall be placed in a stable configuration. A five foot buffer area shall be maintained between the footprint (and vertical plane) of the stockpile(s) and the perimeter of the pad(s) and the stockpile area fencing. The Contractor shall inspect the stockpile area(s) and report any deficiencies to FDF. Inspections shall be documented in the Contractor's Daily Work Activities Report and shall include at least the following:

a. Daily and after storm events with heavy rains and/or strong winds to ensure that piles remain in a safe and controlled configuration;

b. Covers of catch basins to ensure that they remain unclogged and free of obstructions;

c. Diking to ensure that controls are in good condition, permitting easy flow of runoff; and

d. Perimeter fencing, gates, and other materials required for maintaining project control of the stockpile area(s).

2. FDF will perform routine radiological contamination surveys and airborne radioactivity monitoring. If deemed necessary by FDF, the Contractor shall take measures to mitigate the spread of contamination to areas outside of the staging area and to maintain airborne radiological levels within allowable limits. These measures may include area decontamination, application of fixatives, or other measures proposed by the Contractor and accepted by FDF.

3. Floor Load Capacity:

If the Contractor chooses to stage any debris on a floor other than a slab-on-grade a structural engineering analysis shall be required. It shall be the Contractor's responsibility to perform the analysis to verify the loading capacity of said floor and submit the analysis to FDF signed and stamped by a Professional Engineer (PE) registered in the State of Ohio to ensure that the load capacity is not exceeded.

D. Collection and Containerization of Controlled Area Office Trash from Contractor-Owned Office Trailers:

Office trash from Contractor-owned office trailers shall be collected and managed in accordance with the following requirements:

1. Collect office trash from Contractor-owned office areas for participation in the controlled area office trash program.

2. Prohibited items, items that are suspected to be contaminated, or items not normally discarded into office area trash containers shall be segregated from typical office trash. Prohibited items include, but are not limited to:

   - tools,
   - equipment,
   - mop heads,
   - hose clamps,
   - floor sweepings,
   - aerosol cans,
   - high density material,
   - protective clothing (Anti-C's, gloves, booties, coveralls),
   - yellow maslin,
   - yellow tape/Rad Con tape,
   - yellow herculite,
   - yellow shoe covers,
   - radiological smears,
   - radiological safety signs,
   - plastic sample bottles, and
   - instrument survey cords.

3. If any prohibited or suspect materials are found (with the exception of tools and equipment), dispose of them as contaminated material in accordance with the MSCC.

4. If tools or equipment are found in office area trash containers, contact the FDF Construction Manager for radiological evaluation and the procedure for decontamination or disposition.

5. Package office trash in green tinted translucent plastic bags provided by FDF. These types of bags are exclusive for the Controlled Area office trash disposal program.

6. Seal each clear trash bag and green trash bag with tape (not yellow in color) and indicate the building or area where the trash was generated directly on each trash bag with a paint stick or permanent marker.

7. Place office trash in a designated area agreed upon by FDF and the Contractor. Office trash will be collected daily by FDF, unless stated otherwise by the D&D Contract.

3.4 FIELD QUALITY ASSURANCE

The Contractor and FDF shall inspect filled containers upon their return to the container staging area to verify that no damage has occurred during the filling of the container and that materials/debris are segregated and sized according to the MSCC.

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END OF SECTION